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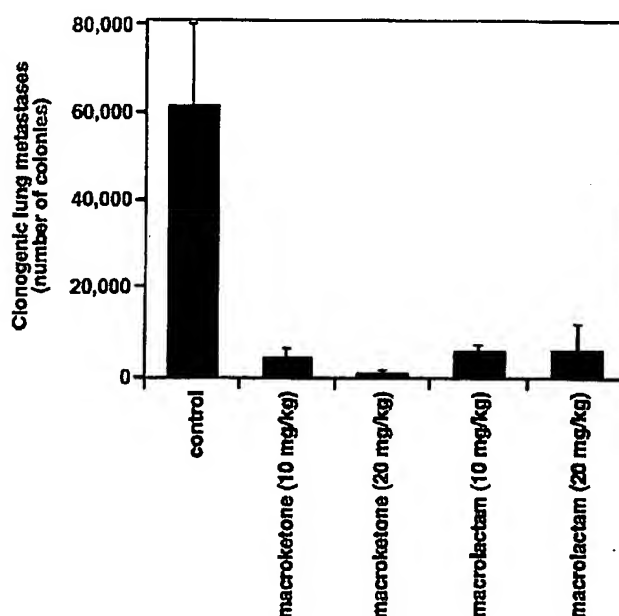
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[Continued on next page]

(54) Title: MIGRASTATIN ANALOGS AND USES THEREOF



(57) Abstract: The present invention provides compounds having formula (I), and additionally provides methods for the synthesis thereof, compositions thereof, and methods for the use thereof in the treatment of various disorders including cancer, metastasis and disorders involving increased angiogenesis, wherein R₁-R₆, R_a-R_c, Q, Y₁, Y₂ and n are as defined herein.



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07D A61K C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GAUL C ET AL: "Synthesis of the macrolide core of migrastatin" TETRAHEDRON LETTERS, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 43, no. 50, 9 December 2002 (2002-12-09), pages 9039-9042, XP004391896 ISSN: 0040-4039 Cpds. 1, 13	1-70
X	NAKAMURA ET AL: "Absolute Configuration of Migrastatin, a novel 14-Membered Ring Macrolide" THE JOURNAL OF ANTIBIOTICS, vol. 55, no. 4, April 2002 (2002-04), pages 442-444, XP009035010 ISSN: 0040-4039 Cpd. 2	1-70

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/009571

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WOO ET AL.: "Migrastatin and a New Compound, isomigrastatin, from Streptomyces platensis" THE JOURNAL OF ANTIBIOTICS, vol. 55, no. 2, February 2002 (2002-02), pages 141-146, XP009035019 ISSN: 0040-4039 The compound "isomigrastatin" -----	1-70
X	US 2002/119937 A1 (CARNEY JOHN ET AL) 29 August 2002 (2002-08-29) abstract -----	1-70
X	TAKEMOTO ET AL.: "Migrastatin, a Novel 14-Membered Ring Macrolide, Inhibits Anchorage-independent Growth of Human Small Cell Lung Carcinoma Ms-1 Cell" THE JOURNAL OF ANTIBIOTICS, vol. 54, no. 12, December 2001 (2001-12), pages 1104-1107, XP009035020 ISSN: 0040-4039 the whole document -----	1-70
X	"MIGRASTATIN, A NOVEL 14-MEMBERED LACTONE FROM STREPTOMYCES SP, MK929-43F1" JOURNAL OF ANTIBIOTICS, JAPAN ANTIBIOTICS RESEARCH ASSOCIATION. TOKYO, JP, vol. 53, no. 10, October 2000 (2000-10), pages 1228-1230, XP002938945 ISSN: 0021-8820 the whole document -----	1-70

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/009571

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: -

Present claims 1-70 relate to an extremely large number of possible compounds and their use. Support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds and uses claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible.

Furthermore the initial phase of the search revealed a very large number of documents relevant to the issue of novelty. So many documents were retrieved that it is impossible to determine which parts of the claims may be said to define subject-matter for which protection might legitimately be sought (Article 6 PCT).

Also for these reasons, a meaningful search over the whole breadth of the claims is neither reasonable nor possible.

Consequently, the search has been restricted to:

Compounds (I) which are - in their broadest scope - represented by the structural formulas displayed in claim 5, with the additional restriction that R1 and R2 are hydrogen and R3, R5 and R6 represent a methyl group

as well as compositions and uses thereof.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

